

DEC STD 012-5 Unified Numbering Code (UNC) —Manufacturing Control Part Numbering Conventions

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ABSTRACT: This document establishes the procedure to allow flexibility for manufacturing to assign part numbers in measuring and controlling material and process flow. This document also defines those part classes that are restricted to one plant only and those that can be transferred to other plants.

APPLICABILITY: This document is mandatory for Digital personnel involved in assigning manufacturing part numbers. The standard does not apply to part number assignments for parts that come from a vendor or that go to a customer.

STATUS: APPROVED 30-Nov-1992; use VTX SMC for current status.

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1 INTRODUCTION

This standard establishes the procedure for manufacturers to assign part numbers with flexibility in measuring and controlling material and process flow.

1.1 SCOPE

Part number assignment for manufacturing applications is standardized within this document by definition and control of the following areas:

- a. Definition of the 2-5-2 numbering format and standard numbering conventions assigned for use in the manufacturing applications
- b. Definition of *DEC STD 012-0 Part Identification Standard* part classes available and assigned for manufacturing applications, plant-specific part numbers (not transferrable between plants) and interplant part numbers (transferrable between plants)
- c. Definition of categories and intended use of manufacturing part numbers
- d. Listing of part number assignment responsibilities

This standard applies only to manufacturing part number assignments; *DEC STD 115-0 Manufacturing Plant Documentation (MPD) Identification and Control* defines manufacturing plant documentation number assignment requirements.

This standard applies to parts that are plant-specific (cannot be transferred between plants or customers) and their relationship to interplant parts that can be transferred between plants and customers. All parts must have a part number as defined in DEC STD 012-0.

1.2 RESPONSIBILITIES

Responsibilities of the plant manufacturing finance manager and the technical domain manager are defined in this subhead.

1.2.1 Plant Manufacturing Finance Manager

The manufacturing finance manager at each plant is responsible for approving the plant-specific and interplant manufacturing control number assignments used at that plant in accordance with the requirements of this standard. The interplant numbers must be input to the Corporate Master Parts File (MPF) before they can be listed on a plant parts file. It is the plant manufacturing finance manager's responsibility to ensure that the required information on a particular part number and its attributes is complete and accurate when the information is entered into the MPF, Bill of Material (BOM), and Labor Detail files.

1.2.2 Technical Domain Manager

The Unified Numbering Code (UNC), which is the part numbering system used within Digital, is managed as a technical domain as defined in *DEC STD 066-1 Technical Domains in the Product Development Process*. The domain manager for Unified Numbering is David Crowley (use \$ VTX ELF for the latest location information). He is the responsible person for this section of DEC STD 012, and he provides general control for all Digital standards that define the structure, assignment, or use of part classes, part numbers, part identifiers, and document identifiers. The Unified Numbering Domain Manager approves all new part classes and maintains a list of all approved part classes. Any requests to change this

standard must be submitted to him. In addition, any applications of the Plant-Specific Manufacturing Control part-numbering system not explicitly covered in this document may be approved by the domain manager based on a written request.

2 REQUIREMENTS

The use of UNC as described in DEC STD 012-0 is required for all part number assignments within manufacturing.

All manufacturing control part numbers shall be in the 2-5-2 format described in DEC STD 012-0, with the additional requirements specified by this standard.

2.1 MANUFACTURING CONTROL PART NUMBER STRUCTURE

The part class codes for the manufacturing control part numbers identify the process level for which BOM, labor, or cost data is to be accumulated or reported. These part classes are not to be marked on the product.

The part number and variation identifier of the manufacturing control part number (that is, the 5-2 portion of the 2-5-2 part number) are identical to the original part number assigned for a manufactured part or a finished part. The appropriate manufacturing part class code is substituted for the original part class code.

2.2 PART CLASS CODE

There are two categories of manufacturing part class codes: interplant and plant-specific manufacturing control.

2.2.1 Interplant Manufacturing Control Part Class Codes

The following table is a reference summary of interplant part class codes that are used to identify a partially complete product that is transferred between plants. Part numbers using these part class codes are required to have a BOM with part numbers that exist on the MPF located on the Automated Part and Product Information Exchange (APPIX), Major Supplier Assignment, and MPF costs on the Corporate Standard Cost Files. The following part classes are in this category. (Refer to *DEC STD 012-2 Unified Numbering Code for Part Identifier Class Codes* for the complete list of part class codes.)

- | | |
|----|---|
| 58 | Internal manufacturing identification of A–Z series options or modules, 54-class modules, or H7xxx power supplies that have completed assembly but require testing for conformance to their engineering specification. Parts can be inventoried or shipped interplant. The part variation is the same as it was without part class 58. |
| 59 | Internal manufacturing identification of A–Z series options and modules, 54-part class modules, or H7xxx power supplies that have completed only a portion of the testing required (for example, first level or intermediate) but that require additional testing for conformance to their engineering specification. Parts can be inventoried or shipped interplant. The part variation is the same as it was without part class 59. |
| 63 | Untested 57-class hybrid circuit element that has completed assembly but requires testing. |

- 78 Internal manufacturing identification of 70-class subassemblies that are completed but require testing for conformance to their engineering specification. Parts can be inventoried or shipped interplant.
- 79 Internal manufacturing identification of 70-class subassemblies that have completed a portion of the testing required (such as first level or intermediate) but that require additional testing for conformance to their engineering specification. Parts can be inventoried or shipped interplant.
- 80 Internal manufacturing identification of blank-class parts that are missing some items documented on the Engineering Parts List (KPL). Parts can be inventoried and shipped interplant.
- 81 Internal manufacturing identification of component parts (part classes 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 21, 22, 23, 24, and 91) that require preassembly work, such as, lead forming.
- 82 Internal manufacturing identification of a tested point of manufacture (POM) Kernel (blank class) without diagnostic software and documentation. Parts can be inventoried or shipped interplant.
- 83 Internal manufacturing identification of 54-class parts that are missing some items documented on the KPL. Parts can be inventoried or shipped interplant.
- 84 Internal manufacturing identification of 70-class parts that are missing some items documented on the KPL. Parts can be inventoried or shipped interplant.
- 85 Internal manufacturing identification of 74-class parts that are missing some items documented on the KPL. Parts can be inventoried or shipped interplant.

2.2.2 Plant-Specific Manufacturing Control Part Class Codes

Manufacturing control part class codes provide a method for breaking or combining interplant manufacturing or engineering part numbers into several levels to reflect individual intraplant plant process flow and outside vendor purchases. The assignment, control, and use of manufacturing control part class codes must be unique to the plant. The business controls implemented in the interplant and purchase order systems prevent the movement of these parts from the plant.

The control numbers with BOM, labor, and cost data will reside only in the plant files, but there will be a means for collecting and summarizing this data by the appropriate interplant manufacturing or engineering parent part number.

2.3 STRUCTURE OF PLANT-SPECIFIC MANUFACTURING CONTROL PART CLASS CODES

A plant-specific part number is used to identify a part at various stages of its manufacturing process. To create a plant-specific part number, you must first have the original Engineering (or Interplant) part number of the part that is being built.

The plant-specific number is created by replacing the part class of the original part number with a plant-specific part class, following the matrix in Table 1. The first character of a plant-specific part class identifies the stage in the manufacturing process (see the column marked *First Character* in Table 1). These stages are defined as follows:

PLANNING	—	The stage when new parts or parts to be introduced in future ECOs can be set up with anticipated BOMs or Labor Details so that future raw materials or labor can be forecasted.
KITTING	—	The stage when portions of kits are to be issued at different times or locations or raw material is to be pre-processed and returned to stock, for example, sequence reels, pre-form leads, terminate wires. This process also includes assigning part numbers for allocating raw materials to future kits.
BUILD	—	The stage when parts are to be located and valued at various stages of completion, for example, machine insert, hand insert, subassembly, option assembly. Also, subassemblies that are to be lumped into larger subassemblies or divided into smaller ones; for example, a transformer (L1-12345-01) can have leads terminated in one area while a power harness (L2-12345-01) is built in another area, and these parts plus raw materials are assembled as 70-12345-01 in a third area.
TEST	—	The stage when part numbers are assigned for locating and valuing inventory in Test and Repair.
PACKAGING	—	The stage when a part number and BOM are assigned identifying special and bulk packaging requirements. This process also includes the Plant Standard Labor Cost for packaging and for billing Digital Services.
POST TEST	—	The stage when a part number and Plant Standard Cost are assigned for special testing of finished units for customers and Digital Services.

The second character of the plant-specific part class ties the plant-specific number back to the part class of the original Engineering (or Interplant) part number (see the columns under *Second Character* in Table 1). Table 1 offers a range of values for these second characters for use by the plant.

The following example describes how plant-specific part numbers can be formed using Table 1.

Example: A plant is building a module with the part number 54-12345-01. The plant needs to create one part number for the kit of components that will be pulled from the stockroom for the auto-insertion process, and another part number for the kit that will be pulled for the hand-insertion process.

This can be accomplished by creating two plant-specific *Kitting* part numbers. Looking down the left-most column of Table 1, marked *First Character*, the character *K* is shown as the first character for a *Kitting* part number. Thus the plant-specific part class will begin with a *K*.

To determine the second character of the plant-specific part class, you begin by looking across the top section of Table 1 for the part class of the original part number. The class *54* is found in the first column of part classes. Looking down this column to the row where *Kitting* is listed, the range *0-9* is shown. The second character of the plant-specific part class must be a character in this range.

The first kit could be assigned the number, K0-12345-01, and the second kit could be assigned the number, K1-12345-01.

Plant-specific part numbers must not be added to the Corporate MPF. On the plant files, the parts will exist with a description and a cost; often they will own or appear on a plant-specific BOM. (In the preceding example, the components in the kits would appear as the BOMs of the K0- and K1-class kits; and the K0- and K1-class numbers would themselves appear on the BOMs of higher levels of process or assembly.) The Corporate MPF and Corporate BOM files would have the description, cost, and BOM only of the original part number (54-12345-01 in the preceding example).

Table 1 displays plant-specific part class codes with corresponding engineering or interplant class codes. Table 2 provides a listing of plant-specific part classes in alphanumeric order.

Table 1: Correspondence of Plant-Specific Part Class Codes with Engineering or Interplant Class Codes

Engineering and Interplant Part Number Part Class Codes								
See Note	Blank			70			74	Reserved for Future Application
	50							
	54							
	57							
Interplant	80	58	59	84	78	79	85	
	82	63						

Corresponding Plant-Specific Class Codes								
First Character	Second Character							
P (Planning)	0-3	4-6	—	7-9	A-C	—	D-F	G-Z
K (Kitting)	0-9	A-K	—	L-R	S-W	—	X-Z	—
H L (Building)	0-9 —	A-K —	— —	— 0-9	— A-K	— —	— L-R	L-Z S-Z
T (Testing)	5-9	—	0-4	A-E	—	F-K	L-N	P-Z
G (Packaging)	0-1	2-3	—	4-5	6-7	—	8-9	A-Z
A (Post Test)	3-4	—	—	5-6	—	—	—	7-9

NOTE

The *blank* part class is assigned to parts that are intended for sale. Etched boards are 50, modules are 54, and hybrid circuits are 57.

Table 2 shows the meaning of each valid plant-specific part class. For each range of plant-specific part classes, the table shows the process level and the part class of the original part number. For example, the range A5-A6 is used for 70-class parts in the Post Test phase of manufacturing.

Table 2: Plant-Specific Manufacturing Control Part Class Codes in Alphanumeric Order

Manufacturing Plant-Specific Class	Process Level	Manufacturing Interplant	Engineering Part
A3-A4	Post Test	80	<i>blank</i> , 50, 54, 57 (See Note)
A5-A6		84	70
A7-A9	Post Test	—	Reserved for future use
G0-G1	Packaging	80, 82	<i>blank</i> , 50, 54, 57
G2-G3		58, 63	—
G4-G5		84	70
G6-G7		78	—
G8-G9		85	74
GA-GZ	Packaging	—	Reserved for future use
H0-H9	Building	—	<i>blank</i> , 50, 54, 57
HA-HK		58, 63	—
HL-HZ	Building	—	Reserved for future use
K0-K9	Kitting	—	<i>blank</i> , 50, 54, 57
KA-KK		58, 63	—
KL-KR		—	70
KS-KW		78	—
KX-KZ	Kitting	—	74
L0-L9	Building	84	70
LA-LK		78	—
LL-LR		85	74
LS-LZ	Building	—	Reserved for future use
P0-P3	Planning	—	<i>blank</i> , 50, 54, 57
P4-P6		58, 63	—
P7-P9		—	70
PA-PC		78	—
PD-PF		—	74
PG-PZ	Planning	—	Reserved for future use
T0-T4	Testing	59	—
T5-T9		80, 82	<i>blank</i> , 50, 54, 57
TA-TE		84	70
TF-TK		79	—
TL-TN		85	74
TP-TZ	Testing	—	Reserved for future use

NOTE

The *blank* part class is assigned to parts that are intended for sale. Etched boards are 50, modules are 54, and hybrid circuits are 57.

APPENDIX A REFERENCED DOCUMENTS

A.1 Digital Documents, EL-Class

Document Number	Document Title
EL-00012-00	<i>DEC STD 012-0 Part Identification Standard</i>
EL-00012-02	<i>DEC STD 012-2 Unified Numbering Code for Part Identifier Class Codes</i>
EL-00066-01	<i>DEC STD 066-1 Technical Domains in the Product Development Process</i>
EL-00115-00	<i>DEC STD 115-0 Manufacturing Plant Documentation (MPD) Identification and Control</i>

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